

Amendments to the Claims

Please add new Claims 37 and 38. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1-14 (Canceled)

15. (Previously Presented) A method for monitoring material properties, said method comprising:

mounting an electromagnetic sensor with perforations on a test material surface, the sensor having conducting segments and being responsive to an electrical property of the material area under the sensor, the perforations in the sensor allowing corrosion to occur at the test material surface;

driving the conducting segments with an electrical signal to measure a sensor response; and

converting the sensor response into at least one electrical property of the material under the sensor.

16, 17 (Canceled)

18. (Withdrawn) A method for monitoring material properties, said method comprising:

mounting a conformable spatially periodic eddy-current field sensor on a test material surface, the sensor having conducting segments and being responsive to an electrical property of the material area under the sensor;

driving segments with an electrical signal to measure a sensor response;

converting the sensor response into at least one electrical property of the material under the sensor; and

shaping the test material to create a stress distribution so that fatigue damage initiates under the sensor.

19. (Withdrawn) A method as claimed in Claim 18 where the test material is formed into a dogbone shape and the center section is thinned to localize fatigue damage.
20. (Withdrawn) A method as claimed in Claim 19 where the test material further comprises reinforcement ribs on the edges.
21. (Withdrawn) A method as claimed in Claim 20 where the test material further comprises radius cutouts on both sides of the thinned section.
22. (Withdrawn) A method as claimed in Claim 18 where the test material further comprises radius cutouts on both sides of the thinned section.
- 23-33 (Canceled)
34. (Previously Presented) A method for monitoring material properties, said method comprising:
 - mounting an electromagnetic sensor on a test material surface to be exposed to environmental conditions, the sensor having conducting segments and being responsive to an electrical property of the material area under the sensor, with the mounted sensor permitting environmental exposure of the material area under the sensor;
 - driving the conducting segments with an electrical signal to measure a sensor response; and
 - converting the sensor response into at least one electrical property of the material under the sensor.
35. (Previously Presented) A method as claimed in Claim 34, wherein the electromagnetic sensor is perforated.

36. (Previously Presented) A method as claimed in Claim 34, wherein the environmental exposure causes corrosion of the test material surface.
37. (New) A method as claimed in Claim 15, wherein the sensor response is used to monitor and inspect the test material for stress corrosion cracking or corrosion fatigue.
38. (New) A method as claimed in Claim 34, wherein the sensor response is used to monitor and inspect the test material for stress corrosion cracking or corrosion fatigue.